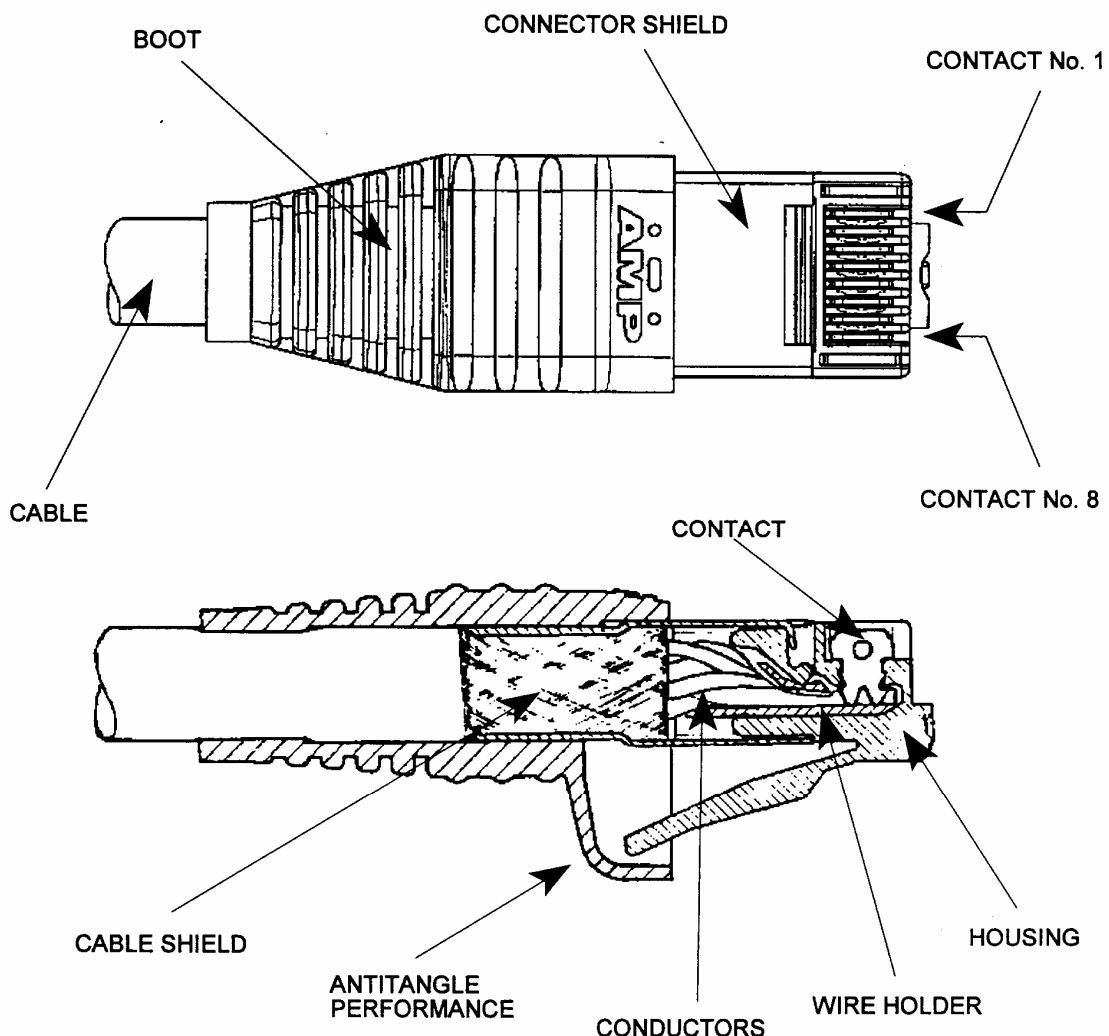


**EMT MODULAR PLUG CONNECTORS**

**1. INTRODUCTION**

This specification covers the application requirements for AMP\* EMT Modular Plug Connectors. These requirements are applicable to hand or automatic machine terminating tools. Specific wire to be used with these connectors is shielded balanced cable, 24-26 AWG stranded wire, provided insulated conductor outside diameter is between 0.80 and 1.00, and jacket outside diameter between 5.0 and 6.0, or between 6.0 and 7.0. See Section 3.1. for cable details.

Basic terms and features of components are provided in Figure 1.



DR DATE R. Solé **	14/Jun/2005	APVD DATE L. Batlló **	14/Jun/2005
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Rev. F, Issue

*Figure 1: Basic terms and features***2. REFERENCE MATERIAL****2.1. Revision Summary**

This paragraph is reserved for a revision summary of changes and additions made to this specification which include the following:

- Rev F – Added instructions for terminating braid-foil cable  
Per EC ES00-0036-05 – Update PN of Dual Terminating Machine  
Per EC ES00-0071-04 - Updated Hand tool Instruction Sheet.  
Per EC ES00-0108-99 - Updated Tooling Information for thick cable EMT Modular Plug Version.  
Per EC ES00-0052-99 - Updated Tooling Information for Overmouldable EMT Modular Plug Version.  
Per EC ES00-0001-98: - Updated Tooling Information and added Figure 8.

**2.2. Drawings**

AMP Customer Drawings for specific products are available from the responsible AMP Engineering Department via the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by AMP.

**2.3. Specifications**

AMP Product Specification 108-19102 covers test and performance requirements.

**3. REQUIREMENTS****3.1. Cable**

1. Cable Type: Shielded Round Cable, 4 Twisted Pairs (Pairs individually shielded or not)
2. Conductor Type: 24-26 AWG stranded wire
3. Conductor Insulation Outside Diameter: 0.80-1.00 mm
4. Cable Jacket Insulation Diameter: 5.0-6.0 mm for Standard and Overmouldable Versions and 6.0 – 7.0mm for Thick Cable Version
5. Shield Type: foil and/or braid

<b>CONDUCTOR *</b>	<b>T568A</b>	<b>T568B</b>
1	white-green	white-orange
2	green	orange
3	white-orange	white-green
4	blue	blue
5	white-blue	white-blue
6	orange	green
7	white-brown	white-brown
8	brown	brown

\* See Figure 1 for conductor/contact reference

*Figure 2: Color coding according to T568A and T568B*

### 3.2. Termination Procedure

#### 3.2.1. Cable Preparation (Figure 3)

1. Slide the boot onto the round cable. See Figure 3.1.
2. Strip the cable jacket (30 ÷ 40 mm). See Figure 3.1.

**CAUTION**

*Care shall be taken not to cut the cable shield (Data Cable Stripper PN 525421-8 is appropriate).*

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3. Fold the cable braid back over the cable jacket. See Figure 3.2.

**NOTE**

*If cable has plastic aluminium laminated foil between braid and wires, then cut this foil at the same level than cable jacket and remove it..*

4. Bend the drain wire back across center of cable shield on external conductive side. See Figure 3.2.
5. Slide the connector shield onto the cable shield. See Figure 3.3.

**CAUTION**

*Be careful do not exceed the cable shield length.*

**NOTE**

*If the cable diameter is close to 6.0 mm (7.0 mm for Thick Cable Version) it may be necessary to rotate the connector shield as it passes over the cable shield.*

6. Cut and remove the plastic wrap if any.

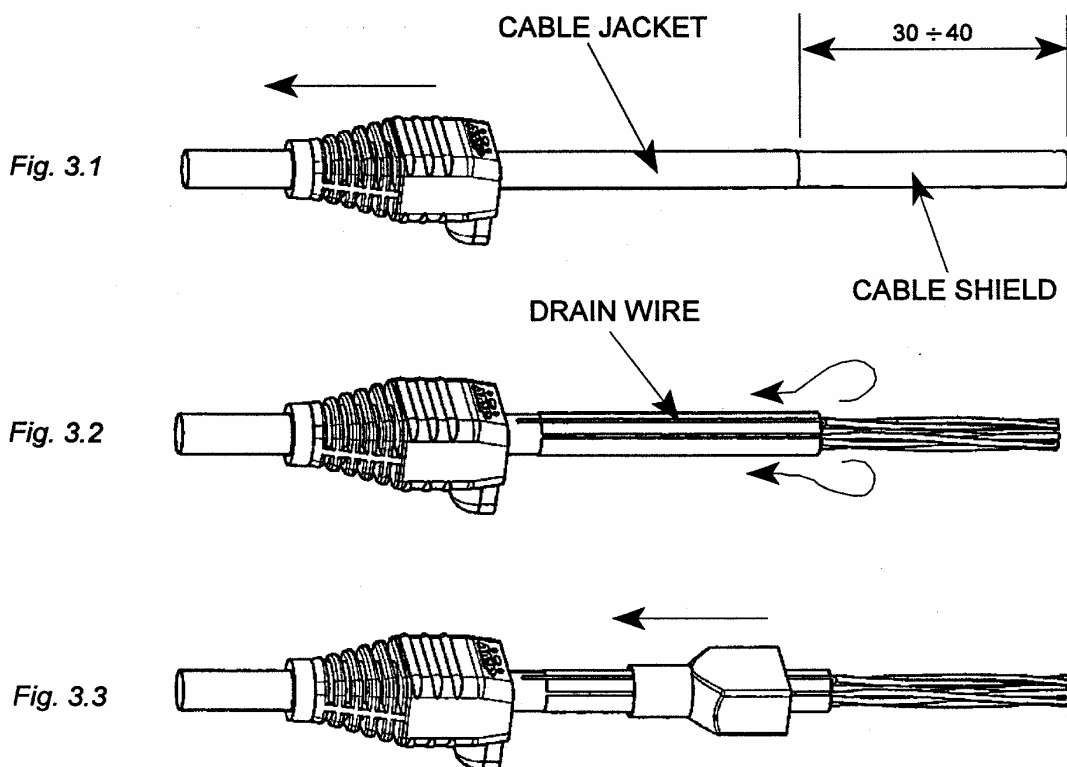


Figure 3: Cable Preparation

**3.2.2. Conductors Arrangement**

**A. Conductors Arrangement for Cables with Unshielded Twisted Pairs (Figure 4)**

1. Identify conductor pairs.

**NOTE** *The color coding according to T568A and T568B is transcribed in Figure 2 as a reference.*

2. Position conductor pairs: conductors 7&8 to the left, conductors 1&2 to the right, conductors 4&5 in the middle and conductors 3&6 backwards (raised up to 90° is enough). See Figure 4.1.
3. Cross conductors 7&8 over conductors 4&5 (from left to right) and cross conductors 1&2 over conductors 4&5 (from right to left). The order doesn't matter. See Figure 4.2.
4. Untwist conductors 4&5 and orient them in the correct order. See Figure 4.3.
5. Untwist conductors 3&6 and orient them in the correct order. See Figure 4.4.
6. Untwist conductors 1&2, 7&8 and orient them in the correct order. See Figure 4.5.
7. Hold the conductors in the cross over region to maintain the proper orientation of the conductors
8. Trim the conductor ends (Figure 4.5). This makes insertion into the wire holder easier.

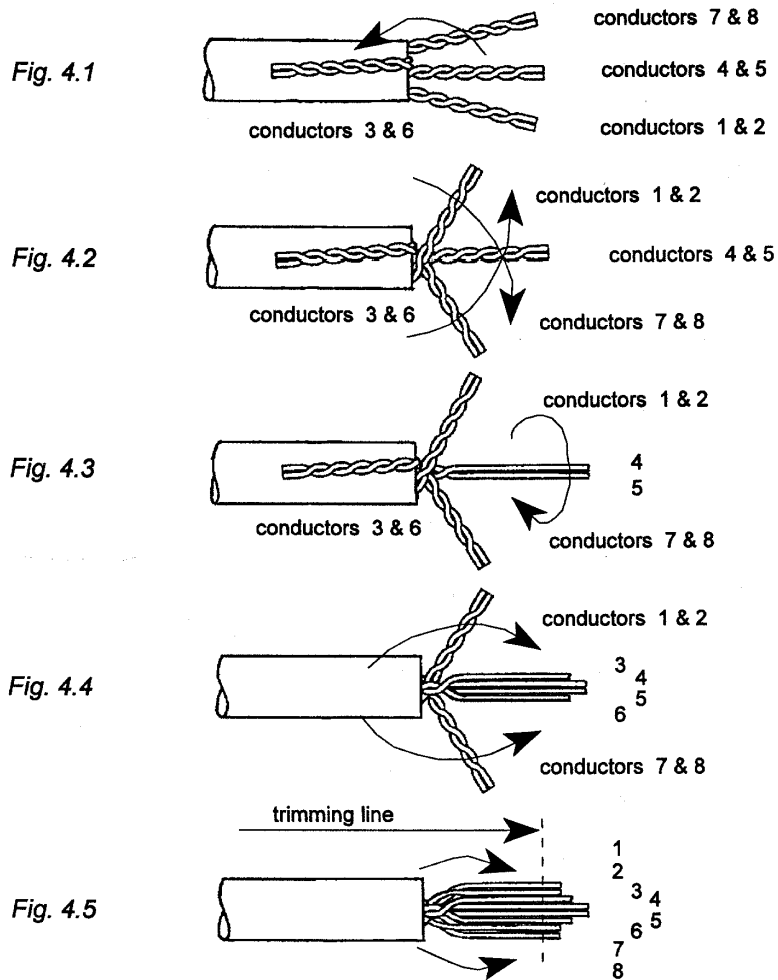


Figure 4: Conductors Arrangement for cables with Unshielded Twisted Pairs

**B. Conductors Arrangement for Cables with Shielded Twisted Pairs (Figure 5)**

1. Strip shield for each pair maintaining 4.0÷6.0 mm shield from the jacket end. See Figure 5.1.
2. Identify conductor pairs.

**NOTE**

*The color coding according to T568A and T568B is transcribed in Figure 3 as a reference.*

3. Position the conductor pairs so that they are sequenced 1&2, 3&6, 4&5 and 7&8 respectively. See Figure 5.1.
4. Untwist conductors and orient them. See Figure 5.2.
5. Cross conductor 6 over conductors 4&5. See Figure 5.3.
6. Hold the conductors in the cross over region to maintain the proper orientation of the conductors.
7. Trim the conductor ends (see Figure 5.3). This makes insertion into the wire holder easier.

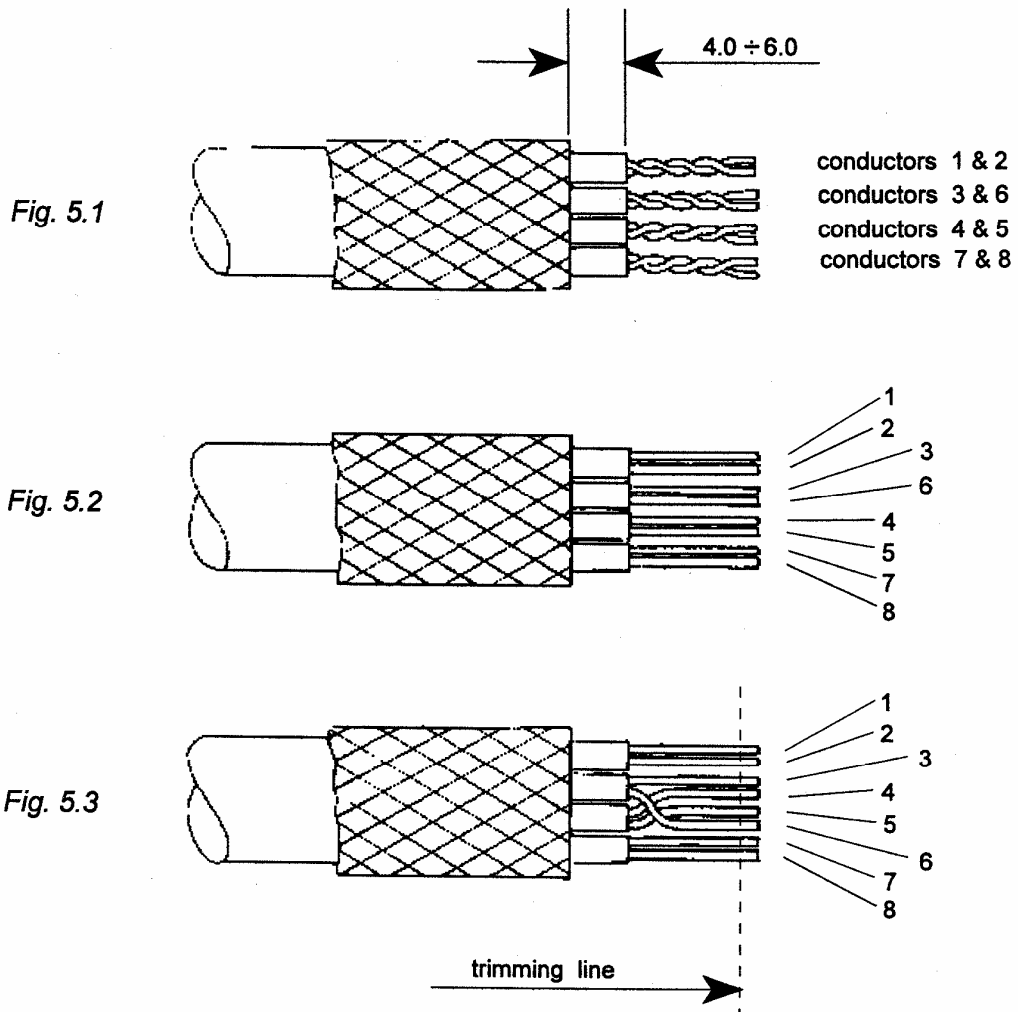


Figure 5: Cable Arrangement for cables with Shielded Twisted Pairs

**3.2.3. Insertions and Crimping** (Figures 6a, 6b)

1. Slide the wire holder onto the conductors in the required orientation. See Figure 6.1.

**NOTE**

Use the floor of the wire holder to bring the conductor ends into the same plane.

**CAUTION**

The wire holder should be fully slide down onto the twisted conductors until conductors resistance impede to continue.

2. Turn the subassembly (housing + contacts) over to aid trimming. See Figure 6.2.
3. Trim the conductors using the front edge of the wire holder as a guide. See Figure 6.3.
4. Turn the subassembly over to aid insertion. See Figure 6.4.
5. Slide the plug subassembly onto the wire holder. See Figure 6.5.

**CAUTION**

Make sure you have finished completely the insertion.

**VISUAL AID:** Lateral protuberance back edge of the wire holder has to be at the same plane that the back plane of the subassembly. See Figure 6.6.

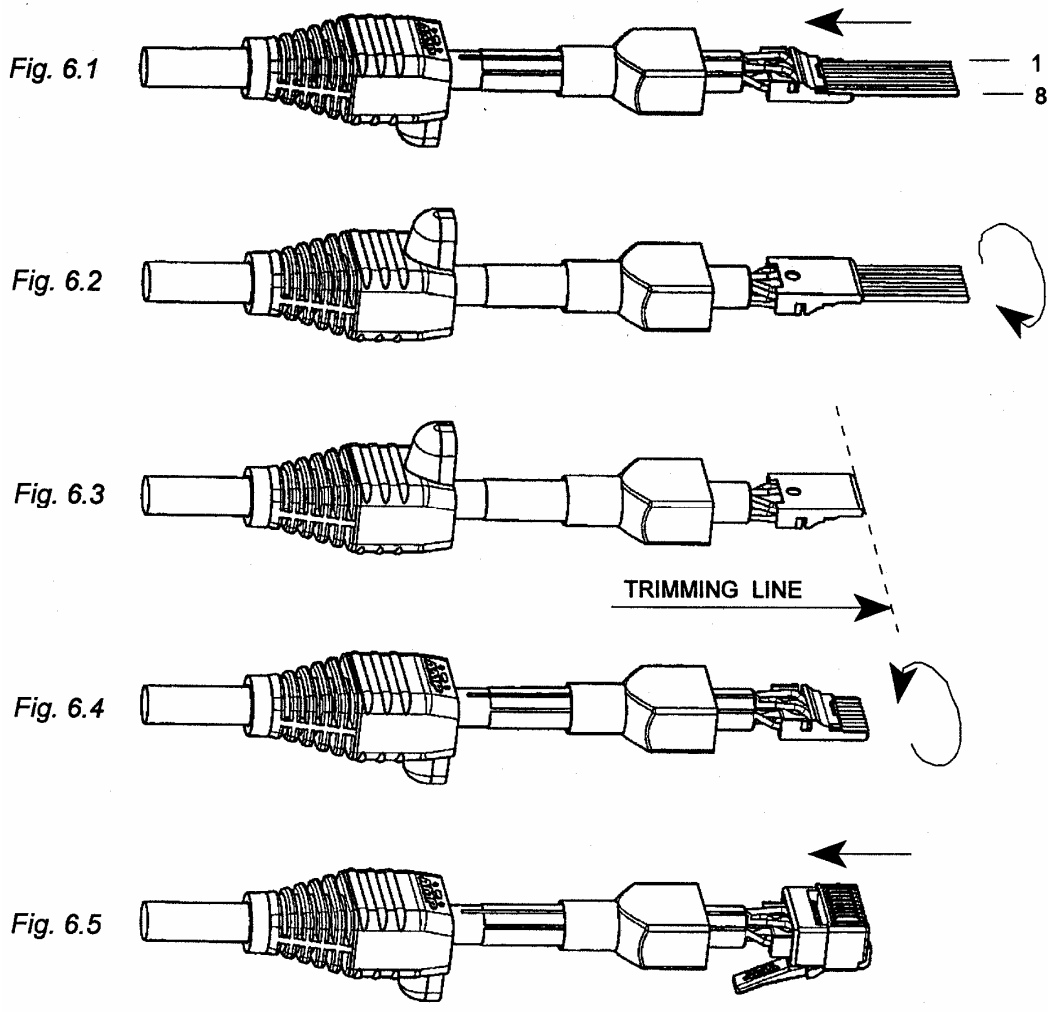


Figure 6a: Insertions and Crimping

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6. Hold tightly the plug subassembly and slide the connector shield onto the plug subassembly. See Figure 6.7.
7. Insert the connector into the tooling and crimp it. See Figure 6.8.

**CAUTION** Press the plug against the tooling when crimping to ensure the correct position of the conductors. See item 3.3.A.

8. Trim back the remainder of the cable shield and drain wire. See Figure 6.8.
9. Slide the boot onto the crimped plug. See Figure 6.9.

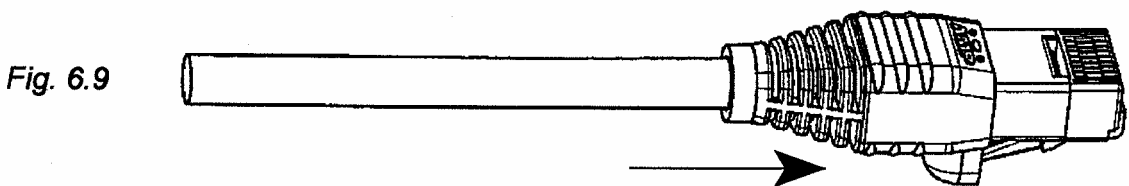
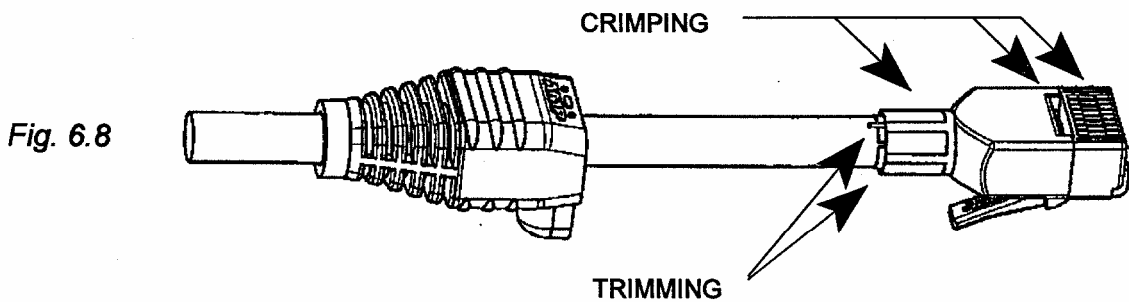
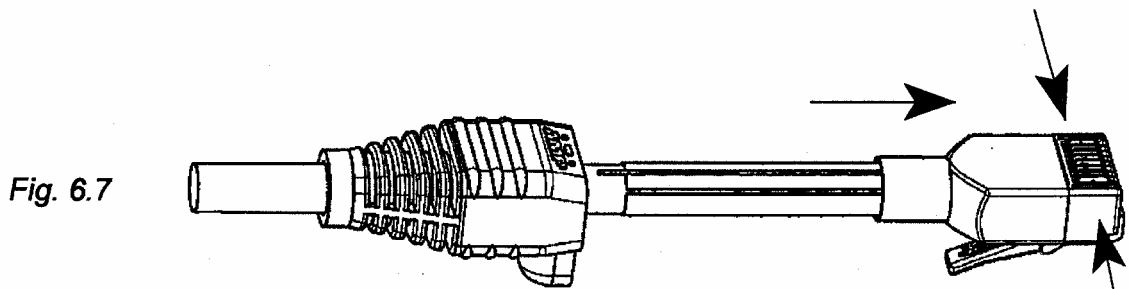
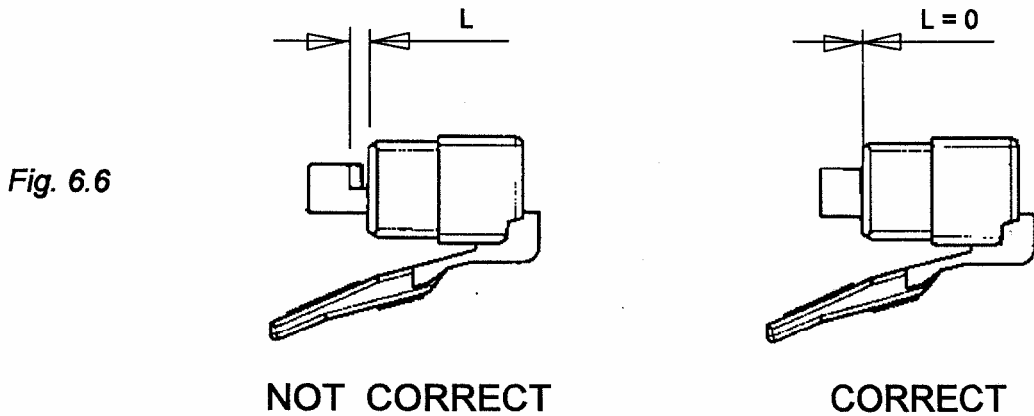


Figure 6b: Insertions and Crimping

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**3.3. Connector Termination Requirements**

- A. Conductors shall be inserted according to dimension specified in Figure 7 (0.80 mm Max.), to ensure a proper electrical interface.
- B. The crimp height shall be  $6.02 \pm 0.13$  and measured as indicated in Figure 7.

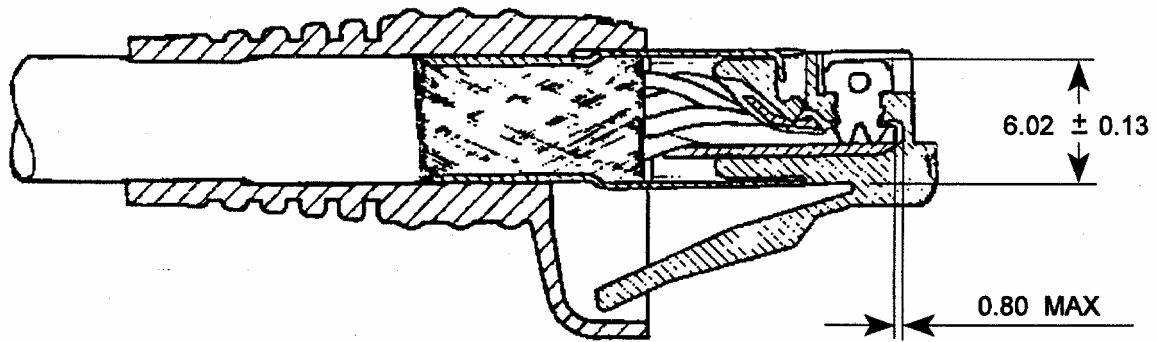


Figure 7: Connector Termination Requirements

**4. TOOLING**

EMT Modular Plugs connectors can be terminated by:

- Automatic machines: Dual Terminator Machine 1320840-[ ] (Instruction Sheet 408-9743) with Dual Terminating Module 791804-[ ] (Instruction Sheet 411-22022). (See Table 1)
- Hand terminating tools: Pro Crimper III full tool 790163-[ ] composed of Pro Crimper III frame 354940-1 (or -2) and Die Set 790163-[ ] (Instruction Sheet 408-8738). (See Table 1)

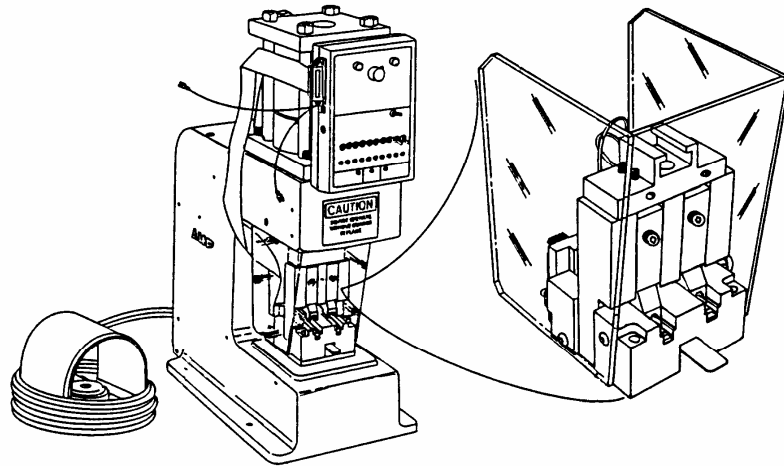
See Figure 8 for the various terminating tooling.

EMT MODULAR PLUG KIT	AUTOMATIC TOOLING DUAL TERMINATING MODULE	HAND TERMINATING TOOLS	
		PROCRIMPER III + DIE SET	ONLY DIE SET
STANDARD PN 336330-1	791804-1	790163-1	790163-2
OVERMOULDABLE PN 336349-1	791804-2	790163-3	790163-4
THICK CABLES PN 336462-1	791804-3	790163-5	790163-6

Table 1



**Dual Terminator Machine  
1320840-[ ]**



**Dual Terminating Module  
791804-[ ]**

**Pro Crimper II Hand Tool  
790163-[ ]**

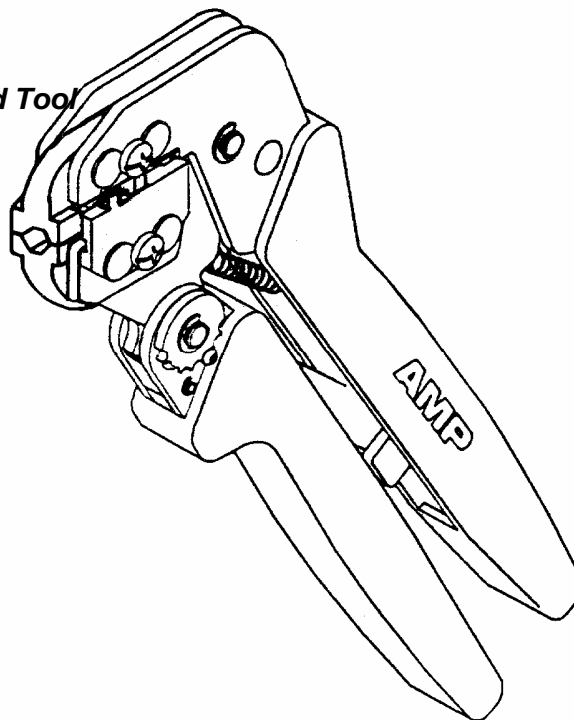


Figure 8: Tooling